



ROCKY FLATS

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL
RESTORATION MANAGEMENT

**DOE-RFFO
ENVIRONMENTAL
RESTORATION
PROGRAM**

**Monthly Report for
March 1995**



April 20, 1995

ADMIN RECORD

A-SW-001557

Table of Contents

Executive Summary	
Significant Activities and Achievements for March 1995	1
Interagency Agreement (IAG) Performance Indicators for Monthly Report	3
Problems and Programmatic Issues	5
Near-Term IAG Table Six Milestones	7
1.0 Introduction	9
2.0 Project Status	11
2.1 OU 1 - 881 Hillside Area	11
2.1.1 OU 1 Assessment	11
2.1.2 OU 1 Remediation	13
2.2 OU 2 - 903 Pad, Mound, and East Trenches	17
2.2.1 OU 2 Assessment	17
2.2.2 OU 2 Remediation	21
2.3 OU 3 - Offsite Areas	25
2.4 OU 4 - Solar Evaporation Ponds	29
2.4.1 OU 4 Assessment	29
2.4.2 OU 4 Remediation	31
2.5 OU 5 - Woman Creek	37
2.6 OU 6 - Walnut Creek	41
2.7 OU 7 - Present Landfill	45
2.1A Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14)	49
2.8 OU 8 - 700 Area	51
2.9 OU 9 - Original Process Waste Lines	53
2.10 OU 10 - Other Outside Closures	57
2.11 OU 11 - West Spray Field	59
2.12 OU 12 - 400/800 Area	61
2.13 OU 13 - 100 Area	63
2.14 OU 14 - Radioactive Sites	65
2.15 OU 15 - Inside Building Closures	67
2.16 Sitewide Activities	69
3.0 Routine Environmental Monitoring	73
3.1 Surface and Sediments	73
3.2 Soils	73
3.3 Groundwater	73
4.0 Subcontractor Identification	75
Appendix - Acronyms	79

EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR MARCH 1995

On March 28, 1995, all waste drums associated with the OU 1 Hotspot Removal were shipped offsite for final disposition.

In OU 3, TM #3, *Human Health Risk Assessment Model Description*, was delivered to the regulatory agencies on March 20, 1995.

In OU 4, All electrical wiring, conduit, and piping have been removed from Cement Silo #1. Also, the concrete pump has been removed. Exterior paint sampling was completed, and preliminary gamma spectrometer results indicate all samples are below the allowable limits. If these results are confirmed, special containment for dismantling the silo will not be required. The interior of the silo has been determined to not be a contaminated area. An access port for emptying the cement was cut on March 17, 1995. Emptying of the silo began on March 20, 1995, and on March 24, 1995, Silo #1 was dropped and loaded on a flatbed truck.

In February 1995, Representatives of the regulatory agencies and the Department of Energy (DOE) agreed to stop work on the Industrial Area (IA) Interagency Agreement (IAG) related milestones until an agreement between all concerned parties is reached on the reconfiguration of the IA Operable Units (OUs) 8, 9, 10, 12, 13 and 14. The DOE views this as a very positive development that will lead to more cost effective and manageable OUs. The Stop Work Order does not apply to current field work activities. Also, Surface Water and Sediment Sampling is exempt from the Stop Work Order.

On March 24, 1995, the OU 15 Draft Proposed Plan was delivered to the regulatory agencies.

Work on the IA Interim Measure/Interim Remedial Action (IM/IRA) Implementation Plan continues and is anticipated to be completed by the end of May 1995.

On March 5, 1995, formal approval of the IA Surface Water and Sediment Field Sampling Plans was received from the Colorado Department of Public Health and Environment (CDPHE). The first set of samples were obtained during the week of March 20, 1995. An ongoing sampling program will continue into April 1995.

The Final Annual Treatability Study Report was completed and delivered ahead of schedule to the regulatory agencies on March 10, 1995.

The first Rocky Flats Summit was held on March 3 - 4, 1995, and produced a basic list of eight priorities that virtually all Summit participants agreed upon. More than 100 people participated in the Summit, including representatives from the CDPHE, the Environmental Protection Agency (EPA), DOE, the Defense Nuclear Facilities Safety Board, Rocky Flats Environmental Technology Site personnel, and 17 citizen groups. The top three priorities for the Rocky Flats agenda for action were make the plutonium safer; reduce the highest risk; and reduce the mortgage (operations, security, and maintenance costs).

IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY) 95 (10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	16	143
Met	12	109
Extensions Granted	14	63
Extensions Denied	0	8
Remaining this FY 95 (to 9/30/95)	22	n/a
Added	1	11
Deleted	1	5

<u>Deliverables in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted/ Completed</u>	<u>Date review was completed EPA CDPHE</u>
	OU 1 Final Corrective Measures Study/Feasibility Study Report	13 Feb 95	
	OU 1 Revised Draft Proposed Plan	13 Feb 95	

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,728,004 gallons
OU 2 Surface Water IM/IRA Treatment	24,806,170 gallons
OU 4 Water Management Tasks (InterceptDr Trench System and Pond Water)	5,167,854 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Final Proposed Plan	18 May 95	18 May 95	On schedule
OU 1 Draft Title II Design	05 Jul 95	30 Nov 96	Extension requested
OU 1 Draft Responsiveness Summary	19 Sep 95	19 Sep 95	On schedule
OU 2 Draft Phase II RFI/RI Report	30 May 95	30 May 95	On schedule
OU 2 Corrective Design/Remedial Design Work Plan	15 Jun 95	03 Mar 98	Extension requested
OU 2 Final Phase II RFI/RI Report	21 Sep 95	21 Sep 95	On schedule
OU 4 IM/IRA Responsiveness Summary	09 Jun 95	09 Jun 95	On schedule
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	29 Aug 95	On schedule
OU 7 Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	31 Aug 95	On schedule
OU 9 Draft Phase I Proposed IM/IRA Decision Document	01 May 95	To be determined	See footnote ¹
OU 9 Final Phase II RFI/RI Work Plan	07 Aug 95	To be determined	See footnote ¹
OU 9 Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	To be determined	See footnote ¹
OU 10 Phase I Proposed IM/IRA Decision Document	26 May 95	To be determined	See footnote ¹

¹ This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Stop Work Order directive that was agreed to by the regulatory agencies and DOE.

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 10 Draft Phase II RFI/RI Work Plan	27 Jun 95	To be determined	See footnote 1
OU 11 Draft Combined Phases RFI/RI Report	20 Jul 95	19 May 95	Ahead of schedule
OU 11 Final Combined Phases RFI/RI Report	19 Sep 95	19 Sep 95	On Schedule
OU 14 Final Phase I RFI/RI Report	23 May 95	To be determined	See footnote 1

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	To be determined	See footnote 1
OU 8 Final Phase I RFI/RI Report	12 Jul 94	To be determined	See footnote 1
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	To be determined	See footnote 1
OU 9 Final Phase I RFI/RI Report	06 Sep 94	To be determined	See footnote 1
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	To be determined	See footnote 1
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	To be determined	See footnote 1
OU 10 Final Phase I RFI/RI Report	30 Jan 95	To be determined	See footnote 1
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	To be determined	See footnote 1
OU 12 Final Phase I RFI/RI Report	15 Sept 94	To be determined	See footnote 1
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	To be determined	See footnote 1
OU 13 Final Phase I RFI/RI Report	11 Jan 95	To be determined	See footnote 1
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	To be determined	See footnote 1

¹ This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs (OUs 8, 9, 10, 12, 13, and 14) are under a Stop Work Order directive that was agreed to by the regulatory agencies and DOE.

PROBLEMS AND PROGRAMMATIC ISSUES

Comments were due from the regulatory agencies in February 1995 for the OU 1 Final Corrective Measures Study/Feasibility Study (CMS/FS) and the Draft Proposed Plan. To date, comments have not been received. Informal discussions indicate that comments may be received by April 7, 1995.

In OU 3, the Colorado Department of Public Health and Environment (CDPHE) Chemicals of Concern dispute process has disrupted the project schedule. DOE will request a three-month schedule extension from the regulatory agencies.

The March 10, 1995, occurrence in which the drilling of an OU 9 borehole south of Building 122 breached the secondary containment of a process waste line highlighted the need for the Site utility and building drawings to be updated to include all lines at the Site. This will require a review of past drawings so that utility lines not shown on utility maps can be added. Future intrusive efforts in the IA are going to increase the risk of hitting utilities, security systems, and other subsurface features.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	See footnote 1
1	Submit Final Proposed Plan	18 May 95	On schedule
14	Submit Final Phase I RFI/RI Report	23 May 95	See footnote 1
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	See footnote 1
2	Submit Draft Phase II RFI/RI Report	30 May 95	On schedule
4	Submit IM/IRA Responsiveness Summary	09 Jun 95	On schedule
2	Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	Extension requested
10	Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	See footnote 1
1	Submit Draft Title II Design	05 Jul 95	Extension Requested
11	Submit Draft Phases (combined) RFI/RI Report	20 Jul 95	Ahead of schedule
4	904 Pad Storage Compliance	31 Jul 95	On Schedule
9	Submit Final Phase II RFI/RI Work Plan	07 Aug 95	See footnote 1
4	Submit Phase I Final IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	On schedule
7	Submit Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	On schedule
1	Submit Draft Responsiveness Summary	19 Sep 95	On schedule
11	Submit Final Phases (combined) RFI/RI Report	19 Sep 95	On schedule
2	Submit Final Phase II RFI/RI Report	21 Sep 95	On schedule
9	Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	See footnote 1
6	Submit Draft Phase I RFI/RI Report	02 Oct 95	On schedule
1	Submit Final Title II Design	03 Oct 95	Extension requested
11	Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	Proposed elimination
10	Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	See footnote 1
3	Submit Draft Phase I RFI/RI Report	30 Oct 95	Behind schedule
5	Submit Draft Phase I RFI/RI Report	01 Nov 95	On schedule
10	Submit Final Phase II RFI/RI Work Plan	21 Nov 95	See footnote 1
4	Submit Final IM Title II Design	18 Dec 95	On schedule
1	Submit Final Responsiveness Summary	22 Dec 95	On schedule
1	Submit Draft Corrective Action Decision/Record of Decision	22 Dec 95	On schedule

¹ This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs (OUs 8, 9, 10, 12, 13, and 14) are under a Stop Work Order directive that was agreed to by the regulatory agencies and DOE.

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
7	Submit Draft Final Phase I IM/IRA Decision Document	05 Jan 96	On schedule
9	Submit IM/IRA Responsiveness Summary	08 Feb 96	See footnote 1
2	Submit Draft Title II Design	15 Feb 96	On schedule
6	Submit Final Phase I RFI/RI Report	21 Feb 96	On Schedule
10	Submit IM/IRA Responsiveness Summary	06 Mar 96	See footnote 1
11	Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	Proposed elimination
1	Submit Final Corrective Action Decision/ Record of Decision	29 Mar 96	On Schedule
1	Submit Corrective Design/Remedial Design Work Plan	29 Mar 96	On Schedule

¹ This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs (OUs 8, 9, 10, 12, 13, and 14) are under a Stop Work Order directive that was agreed to by the regulatory agencies and DOE.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for March 1995. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to the DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2. As required by Paragraph 210 of the IAG, Section 3 contains the schedules for routine environmental sampling. As required by Paragraph 13 of the IAG, Section 4 contains a list that identifies the subcontractors performing work on the program.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up Operable Unit (OU) 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Measure (IM)/Interim Remedial Action (IRA) at OU 1 involved the construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, which was designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. The IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Feasibility Study (FS) continues to be developed in parallel with the operation of the IM/IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work

Changes This Period None

Technical Approach

Changes This Period None

Interagency Agreement

(IAG) Milestone

Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92
Submit Final Phase III RFI/RI Report	15 Nov 93
Submit Revised Phase III RFI/RI Report	15 Jun 94
Submit Draft Corrective Measures Study (CMS)/FS	25 Aug 94
Submit Draft Remedial Action Plan/Proposed Plan	13 Feb 95
Submit Final CMS/FS	13 Feb 95

Future IAG Milestones

Through Fiscal Year (FY) 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	19 Sep 95
Submit Final Responsiveness Summary	03 Aug 94	22 Dec 95	22 Dec 95
Submit Draft Corrective Action Decision/ Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95*

- * A Baseline Change Proposal to change the baseline is in progress.

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	22 Dec 95*
Submit Draft Title II Design	05 Jul 95		30 Nov 96*
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	19 Sep 95
Submit Final Title II Design	03 Oct 95	03 Oct 95	21 Nov 96
Submit Final Responsiveness Summary	03 Aug 94	22 Dec 95	22 Sep 95
Submit Draft Corrective Action Decision/ Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	29 Mar 96
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	29 Mar 96	29 Mar 96
Begin Corrective/Remedial Action Construction	07 May 96	07 May 96	26 Jun 97

* A Baseline Change Proposal to change the baseline is in progress.

March Work Activity Status

The Corrective Measures Study (CMS) and the revised Draft Proposed Plan were delivered to the regulatory agencies in February 1995. The 30-day review of these documents was scheduled for completion by the regulatory agencies on March 24, 1995. To date, comments have not been received. This delay may require a day-for-day extension request.

A Baseline Change Proposal is being developed to address milestone extensions received from the regulatory agencies in January 1995.

DOE directed the Rocky Flats Environmental Technology Site personnel to prepare a concurrence for the interpretation of milestone dates past the Record of Decision for the following milestones:

- Draft Title II Design
- Final Title II Design
- Begin Corrective Action Decision/Record of Decision
- Construction
- Complete Corrective Action Decision/Record of Decision
- Construction
- Submit Performance Summary

The request for a concurrence for the interpretation of the milestone dates past the Record of Decision is required to maintain the integrity of the scheduling for milestones that were not addressed in earlier extension approvals.

Technical Memoranda (TM)

Project

OU 1 - 881 Hillside

TM #10

TM Title

TM Status

Preliminary Remediation Goals

Submitted Final TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date comments were received: EPA 01 June 94, CDPHE
26 Jul 94

TM #11

TM Title

TM Status

Alternative Array

Submitted Draft TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 24 May 94, CDPHE
06 Jun 94

Planned Work for April

- Upon receipt of comments from the regulatory agencies, the comments will be incorporated in the Final CMS/FS and the Draft Proposed Plan.
- A technical position paper to evaluate the pump and treat technology is under development. This technical investigation will analyze the suitability of a pump and treat system for water contaminated with Dense Non-Aqueous Phase Liquids at the OU 1 collection well.

Problems

Comments were due from the regulatory agencies in March 1995 for the Final CMS/FS and Draft Proposed Plan. To date, comments have not been received. Informal discussions indicate that comments may be received by April 7, 1995.

Open Items

The approval of the Final CMS/FS and the Draft Proposed Plan by the regulatory agencies.

2.1.2 OU 1 REMEDIATION

Scope of Work

Changes This Period

None

Technical Approach

Changes This Period

None

**IAG Milestone
Accomplishments**

Submit Draft Proposed Interim Measure (IM)/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones
Through FY 96**

None

March Work Activity Status

Interim Measure/Interim Remedial Action (IM/IRA)
Treatment Facility - Normal water treatment continues.

Treated groundwater this period:	15,841 gallons
- Total treated to date: (through 27 Mar 95)	2,728,004 gallons -

Accelerated Cleanup - OU 1 Hotspot Removal
The plutonium and americium-isotopics data validation was completed.

On March 28, 1995, all waste drums associated with the OU 1 Hotspot Removal were shipped offsite for final disposition.

Work on the Draft Hotspot Removal Report has begun, and this report is scheduled to be delivered to the regulatory agencies on April 25, 1995.

Planned Work for April

**Interim Measure/Interim Remedial Action (IM/IRA)
Treatment Facility**

- Normal Operations will continue.

Accelerated Cleanup - OU 1 Hotspot Removal

- Work on the Draft Hotspot Removal Report will be finalized, and this report is scheduled to be delivered to the regulatory agencies on April 25, 1995.

Problems

None

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound Areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of the small amount of contamination. However, as a result of the public review of the plans and following the agreement among the regulatory agencies and DOE, the single IM/IRA originally planned for OU 2 was divided into two IRAs in FY 90.

The second IM/IRA was established in late 1991. This Subsurface Investigation IM/IRA Environmental Assessment evaluates interim remedial technology actions for removal of residual free-phase Volatile Organic Compound contamination from IHSS 110. The Volatile Organic Compound-removal action involves *in situ* vacuum-enhanced vapor extraction technology. On October 19, 1992, the pilot test plan for the first stage of this removal project was delivered to the regulatory agencies. In the spring of 1993, the project moved into the field at IHSS 110. By September 1993, a mobile vapor extraction system had been installed and operational tests had begun.

The Final Field Report for the OU 2 Detailed Soil Vapor Survey Data was submitted in March 1994, and a pilot test for a soil vapor extraction as specified in the IM/IRA was completed in June 1994. Additionally, extended operations were completed in December 1994, and the Final Pilot Test Report for Test Site No. 1 was issued to the regulatory agencies on November 10, 1994. In March 1995, the implementation of Test Site Nos. 2 and 3 has been canceled from the OU 2 soil vapor extraction program. A new direction towards Accelerated Actions for Trench (T-3) has since been implemented.

The OU 2 remedial investigation that has been completed so far has characterized the nature and extent of contamination in surface soils, subsurface soils, and groundwater. In 1986, an OU 2 Phase I Remedial Investigation (RI) of OU 2 was initially completed, and in December 1993, a Preliminary Draft of the OU 2 Phase II RFI/RI Report was delivered to the regulatory agencies. To date, several alternative technologies have been evaluated, and four TMs addressing different aspects of Risk Assessment have been submitted to the regulatory agencies. Three of four TMs have been approved, and approval is expected on the fourth. The Final OU 2 RFI/RI Report is due to the regulatory agencies in September 1995.

2.2.1 OU 2 ASSESSMENT

Scope of Work

Changes This Period None

Technical Approach

Changes This Period None

IAG Milestone

Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)

21 Dec 89

Submit Final Phase II RFI/RI Work Plan (Alluvial)

12 Apr 90

**IAG Milestone
Accomplishments**

Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93

**Future IAG Milestones
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	30 May 95	17 Apr 95
Submit Final Phase II RFI/RI Report	09 Aug 93	21 Sep 95	27 Jul 95
Submit Draft CMS/FS Report	04 Nov 93	19 Jul 96	11 Apr 96
Submit Final CMS/FS Report	10 May 94	19 Dec 96	30 Aug 96
Submit Draft Proposed Plan	10 May 94	10 Jan 97	13 Sep 96
Submit Final Proposed Plan	09 Aug 94	25 Mar 97	26 Nov 96
Submit Draft Responsiveness Summary	13 Dec 94	25 Aug 97	06 May 97
Submit Final Responsiveness Summary	16 Mar 95	05 Dec 97	08 Aug 97
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Dec 97	08 Aug 97
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	03 Mar 98	04 Nov 97
Submit Corrective Design/ Remedial Design Work Plan	15 Jun 95		17 Apr 98*
Submit Draft Title II Design	15 Feb 96	15 Feb 96	15 Feb 96
Submit Final Title II Design	14 Jun 96	14 Jun 96	14 Jun 96

* A completion date extension of March 3, 1998, has been requested

March Work Activity Status

Remedial Investigation - On March 3, 1995, comments to the Draft Final Technical Memorandum (TM) #5, *Exposure Scenario*, were received from the Colorado Department of Public Health and Environment (CDPHE). All comments received from the regulatory agencies have been incorporated into the Draft Final TM #5. Comment responses from the Rocky Flats Environmental Technology Site personnel have been forwarded to the regulatory agencies for review. Additionally, work on the Draft OU 2 Phase II RFI/RI Report continued.

Trench and Mound Site Characterization - Approximately 75 percent of the geophysical surveys have been completed, and intrusive drilling activities have begun. The contract to perform the Environmental Evaluation/Corrective Action and to prepare the Implementation Plan is currently under technical evaluation.

Feasibility Study

Corrective/Remedial Action Objectives TM - On March 23, 1995, comments to Revision 2 of the Draft Final Corrective/Remedial Action

Objectives TM # 1 were received from the regulatory agencies. These comments are being incorporated into the Final TM #1.

Screening of Remedial Alternatives TM - The preparation of the Screening of the Remedial Alternatives TM is in process.

Detailed Analysis of Remedial Alternatives - Work on the groundwater flow model calibration has been completed, and testing has been initiated. The Phase II CMS/FS through the Record of Decision subcontract was awarded.

Technical Memoranda

Project

OU 2 - 903 Pad, Mound, and East Trenches

TM #1

TM Title

Development of Corrective/Remedial Action Objectives
(Draft submittal in-process)

TM Status

When preparation was concluded: 27 Jan 95
Projected date of Draft submittal to EPA/CDPHE: 01 Feb 95
Actual date of Draft submittal to EPA/CDPHE: 06 Feb 95
Date comments were received: 22 Mar 95

TM #2

TM Title

TM Status

Screening of Remedial Alternatives (Draft submittal in-process)
When preparation was concluded: 27 Jan 95
Projected date of Draft submittal to EPA/CDPHE: 01 Mar 95
Actual date of Draft submittal to EPA/CDPHE: To be determined
Date comments were received: To be determined

TM #4

TM Title

TM Status

OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 (Draft Final submittal in process)
When Draft preparation was concluded: 08 Sep 94
Actual date of Draft submittal: 24 Oct 94
Date comments were received: 10 Nov 94
When Draft Final preparation was concluded: 09 Mar 95
Projected date of Final submittal to EPA/CDPHE: 25 Apr 95
Actual date of Final submittal to EPA/CDPHE: To be determined
Date comments were received from EPA/CDPHE: None required

TM #5

TM Title

TM Status

Exposure Scenarios (Draft Final submittal in process)
When preparation was concluded: 06 Dec 94
Projected date of Draft Final submittal to EPA/CDPHE: 31 Oct 94
Actual date of Draft Final submittal: 07 Dec 94
Date comments were received from EPA/CDPHE: 02 Feb 95 EPA,
03 Mar 95 CDPHE

TM #6
TM Title
TM Status

Modeling
When preparation was concluded: 15 Jan 93
Projected date of submittal to EPA/CDPHE: 15 Jan 93
Actual date of submittal to EPA/CDPHE: 15 Jan 93
Date comments were received: 01 Apr 93 EPA, 31 Mar 93 CDPHE
TM approved

TM #7
TM Title
TM Status

Surficial Soils
When preparation was concluded: 07 Jan 93
Projected date of submittal to EPA/CDPHE: 07 Jan 93
Actual date of submittal: 12 Jan 93
Date comments were received: 21 Jan 93
TM approved

TM #8
TM Title
TM Status

Bedrock
When preparation was concluded: 15 Mar 93
Projected date of submittal to EPA/CDPHE: 01 Mar 93
Actual date of submittal: 15 Mar 93
Date comments were received: 14 Apr 93 EPA, 14 Apr 93 CDPHE
TM approved

TM #8 Addendum
TM Title
TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)
When preparation was concluded: Jun 93
Projected date of submittal to EPA/CDPHE: Jun 93
Actual date of submittal: Jun 93
Date comments were received: FY 93
TM addendum approved

TM #9
TM Title
TM Status

Chemicals of Concern
When preparation was concluded: 08 Aug 94
Projected date of submittal to EPA/CDPHE: 03 Oct 94
Actual date of Draft submittal: 30 Aug 94
Date comments were received: 05 Oct 94
TM approved

TM #10
TM Title
TM Status

Toxicity Assessment
When preparation was concluded: 09 Aug 94
Projected date of submittal to EPA/CDPHE: 30 Aug 94
Actual date of Draft submittal: 02 Sep 94
Date comments were received: 05 Oct 94
TM approved

Planned Work for April

- Work on the Remedial Investigation (RI) Report and the IM/IRA operations, the Feasibility Study, and the Treatability Studies will continue.

Problems None

Open Items None

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period

On March 2, 1995, a Baseline Change Control Proposal to transfer funds from the OU 2 Soil Vapor Extraction Test Sites 2 and 3 work packages into a new Subsurface IM/IRA work package that is titled OU 2 Accelerated Action (T-3) was approved. The existing OU 2 Soil Vapor Extraction Test Sites 2 and 3 internal milestones have been canceled, and new OU 2 Accelerated Action milestones have been established.

Technical Approach Changes This Period

The OU 2 Accelerated Action (T-3) budget has been completed. Work on the Alternative Analysis document continued.

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary	11 Jan 91
and Final IM/IRA Decision Document	
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report	01 Apr 92
(Phase I Granular Activated Carbon)	
Complete IM/IRA Construction	24 Apr 92
(radionuclides removal system)	
Begin Field Treatability Testing	27 Apr 92
(radionuclides removal system)	
Submit Final Treatability Test Report	02 Jun 92
(Phase I Granular Activated Carbon)	
Submit Subsurface Site 1 Draft Test Plan	29 Oct 92
Submit Subsurface Site 1 Final Test Plan	12 Jan 93
Submit Draft Pilot Test Plan Site 2	24 Jun 93
Submit Draft Surface Water Field	13 Jul 93
Treatability Report	
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94
Submit Subsurface Site 2 Draft Test Plan	06 Jul 94
Submit Draft Pilot Test Report Site 1	10 Nov 94
Submit Final Pilot Test Report Site 1	10 Nov 94

**IAG Milestone
Accomplishments**

Start-up Soil Vapor Extraction Test Site 2	02 Mar 95*
Submit Draft Pilot Test Report Site 2	02 Mar 95*
Submit Final Pilot Test Report Site 2	02 Mar 95*
Submit Draft Pilot Test Plan Site 3	02 Mar 95*
Submit Final Pilot Test Plan Site 3	02 Mar 95*
Complete Pilot Unit 3 Installation	02 Mar 95*
Submit Draft Pilot Test Report Site 3	02 Mar 95*
Submit Final Pilot Test Report Site 3	02 Mar 95*
Submit Liquid Removal Draft Proposed Action Memorandum	03 Mar 95

- Because the scopes of work were modified, the Soil Vapor Extraction Test Sites 2 and 3 activities were canceled. New milestone dates to reflect new work scopes that use new technologies have been negotiated.

**Future IAG Milestones
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Alternatives Analysis	11 Apr 95		11 Apr 95
Submit Liquid Removal Final Proposed - Action Memorandum	15 May 95		15 May 95
Submit Acceptance of Alternatives Analysis/Proposed			
Submit Action Memorandum by Public Award Equipment System Design Contract	31 Jul 95		31 Jul 95
Finalize Site Designs	12 Sep 95		12 Sep 95
Submit Approval of <i>in situ</i> Vitrification	24 Oct 95		24 Oct 95
Project Management Plan	14 Nov 95		14 Nov 95
Submit Approval of Site Implementation Plan	14 Nov 95		14 Nov 95

March Work Activity Status

Subsurface IM/IRA Operations

Soil Vapor Extraction - The Final OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 TM #4 was delivered to the regulatory agencies.

Source Removal - On March 3, 1995, the Baseline Change Control Process proposal to transfer funds from the OU 2 Soil Vapor Extraction Test Sites 2 and 3 work packages into a new Subsurface IM/IRA work package that is titled OU 2 Accelerated Action T-3 was approved.

On March 8 and 29, 1995, a working group that consisted of personnel from the CDPHE, the DOE, and the Rocky Flats

Environmental Technology Site met to discuss the OU 2 Alternative Analysis. Four options using a number of criterion to establish the most favorable option were ranked in priority. Additionally, preparation of the Draft Alternatives Analysis Report for remediating OU 2 Trench T-3 (IHSS 110) continued. This Draft Analysis is expected to be completed on April 4, 1995.

Surface Water IM/IRA Operations

OU 2 Field Treatability Unit Water Treatment Facility - Activities at the OU 2 Field Treatability Unit Water Treatment Facility remained the same for the month of March 1995. All activities are on schedule.

Surface Water IM/IRA treatment activities included the following:

Treated water this month:	0 gallons
Total treated to date:	24,806,170 gallons

Sitewide Treatment Facility - The Sitewide Treatment Facility activities for the month of March 1995 continued on schedule.

Offsite Disposal of Field Treatability Unit Sludge - On March 10, 1995, a Land Disposal Restriction determination was completed. On March 16, 1995, data validation was completed. On March 28, 1995, Waste Acceptance Criteria forms to the subcontractor were submitted.

Surface Water 59 - The SW-59 investigation activities occurred on March 21, 1995. The investigation consisted of hand-digging three small exploratory trenches near the seep. A report is being prepared to summarize the findings of this investigation.

Planned Work for April

- Work on the OU 2 Subsurface IM/IRA Accelerated Action T-3 activities and on the Surface Water IM/IRA operations will continue.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	30 Oct 95
Submit Final Phase I RFI/RI Report	13 Dec 93	11 Jul 96	11 Jul 96

March Work Activity Status

The CDPHE initially disapproved the CDPHE Chemicals of Concern Conservative Screen Letter Report. The CDPHE has provided the DOE with comments to the Conservative Screen Letter. On March 20, 1995, the DOE responded to the CDPHE comments on the Conservative Screen Letter Report. After the CDPHE reviews DOE's responses, it is expected that these responses will initiate resolution discussions. Because of schedule delays associated with the dispute resolution and schedule/budget impacts, a revised project schedule has been developed. A regulatory agency extension request and Baseline Change Proposal are being developed to address the revised project schedule.

On March 3, 1995, the Jefferson County Remedy Semi-Annual Report for winter 1995 was delivered to the City of Westminster.

On March 20, 1995, TM #3, *Human Health Risk Assessment Model Description*, was delivered to the regulatory agencies.

The TM # 5, *Toxicity Assessment*, was delivered to the regulatory agencies in October 1994, and comments from the regulatory agencies were expected in November 1994. To date, a response to the TM # 5 has not been received from the regulatory agencies.

The preparation of a cost estimate and work scope is being developed for the proposed Neighborhood Environmental Watch Network environmental monitoring system developed by the Los Alamos National Laboratory, the Environmental Protection Agency (EPA), and the DOE for public education. The monitoring system will consist of three self-contained meteorological and gamma radiation monitors (one located onsite and two located offsite) that will provide public access to the environmental monitoring data through the Internet system.

DOE directed a "stop work" to halt construction on an air monitoring station located on 100th Avenue north of Standley Lake. The stop work is in response to recent observations of increased Standley Lake Bald Eagle courtship and nest building activities.

A meeting was held to present OU 3 soil sampling results to the Health Advisory Panel. The Health Advisory Panel will use the OU 3 sample results for comparison with the results for soil samples collected within OU 3 as part of a separate study conducted by the Health Advisory Panel.

Technical Memoranda

Project

TM #1 (RF/RI)
TM Title
TM Status

TM #1 (CMS/FS)
TM Title
TM Status

OU 3 - Offsite Areas

Field Changes to RF/RI the Work Plan
When preparation was concluded: 10 May 93
Projected date of submittal to EPA/CDPHE: 10 May 93
Actual date of submittal: 23 Apr 93
Date comments were received: 05 Jan 94

Preliminary Remediation Goals
When preparation was concluded: In progress
Projected date of submittal to EPA/CDPHE: 11 Jul 96
Date comments were received: To be determined

TM #2
 TM Title Exposure Scenarios for the Human Health Risk Assessment
 TM Status When preparation was concluded: 12 May 93
 Projected date of submittal to EPA/CDPHE: 12 May 93
 Actual date of submittal: 03 May 93
 Date comments were received: 15 Jul 93

TM #3
 TM Title Modeling
 TM Status When preparation was concluded: Jan 95
 Projected date of submittal to EPA/CDPHE: 02 Mar 95
 Actual date of submittal: 30 Mar 95
 Date comments were received: To be determined

TM #4
 TM Title Contaminants of Concern
 TM Status When preparation was concluded: Aug 94
 Projected date of submittal to EPA/CDPHE: 20 Sep 94
 Actual date of submittal: 26 Sep 94
 Date comments were received: 09 Jan 95

TM #5
 TM Title Toxicity
 TM Status When preparation was concluded: Sep 94
 Projected date of submittal to EPA/CDPHE: 10 Nov 94
 Actual date of submittal: 11 Oct 94
 Date comments were received: To be determined

TM #6
 TM Title Ecological Evaluation
 TM Status When preparation was concluded: In progress
 Projected date of submittal to EPA/CDPHE: 11 Jul 96
 Date comments were received: To be determined

Planned Work for April

- The TM #2, *Screening of Alternatives*, will be finalized and resubmitted to the regulatory agencies.
- As a result of delays caused by the Contaminants of Concern dispute resolution, the OU 3 schedule will be revised, and a schedule extension will be requested.
- Comments from the regulatory agencies on TM #5, *Exposure Scenarios*, will be received.
- Sections of the Draft RI Report will be developed and prepared.
- Services to install an air monitoring station and a meteorological monitoring station will be procured.

Problems

The Chemicals of Concern dispute process within the regulatory agencies has disrupted the project schedule. DOE will request a three-month schedule extension from the regulatory agencies.

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

The ponds were relined with various upgraded materials as technology improved through the early 1960s and 1970s; however, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. At the time, the placement of the Interceptor Trench System water into the ponds occurred without meeting Land Disposal Restrictions and the Minimum Technology Requirements of the RCRA. A new, dedicated Building 910 evaporation-treatment facility, which was constructed to process the Interceptor Trench System water stored in the modular tanks, became operational in July 1993. This building was designed to supplement the Site's waste treatment facility in Building 374. Since the completion of Building 910, upgrades have been installed to the Building 374 system, and other Site waste streams that this system has processed have decreased in volume. Presently, the Interceptor Trench System water is treated in Building 910 only if the Building 374 treatment facility is unavailable for extended periods.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) Disposition of noncertified pondcrete and saltcrete and pond sludge processing as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by the regulatory agencies and DOE; (3) the OU 4 assessment and remedial action, which identified the ponds as one of the 16 OUs to be remediated at the Rocky Flats Environmental Technology Site in accordance with the IAG, and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the Site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to the OU 4 assessment and remediation, while the pad operations are considered necessary support activities.

Work in the four technical areas was planned to close the ponds and remediate OU 4. The scope of the work was to (1) remove water and sludge from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related groundwater, (3) remove and store pond sludge in compliance of all regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as required, and (7) remediate groundwater as required.

The RCRA/CERCLA investigation Phase I field work began in FY 93 and will continue through construction of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation Area with other areas funded to provide necessary precursor and support activities to allow the IAG scope to be completed.

In May 1994, the Pond sludge removal operations in four of the five solar evaporation ponds were completed. In August 1994, operations to remove the sludge in Pond 207C began and this pond was emptied in January 1995.

In February 1995, an IM/IRA/Environmental Assessment Decision Document that proposed the Phase I pond closure and remedy was released for public comment. The proposal recommends the use of newly promulgated RCRA regulations designed to improve corrective actions. Contaminated soil, pond sludge, pondcrete, and debris will be permanently placed into the pond closure and isolated to protect human health and the environment. The Final Decision Document is expected to be complete in FY 96.

2.4.1 OU 4 ASSESSMENT

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Phase I RF/RI Work Plan	08 Jun 90
Submit Final Phase I RF/RI Work Plan	26 Nov 90
Submit Draft Phase II RF/RI Work Plan	27 May 94
Submit Final Phase II RF/RI Work Plan	02 Sep 94
Remove Sludge from Ponds	20 Jan 95

**Future IAG Milestones
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RF/RI Report	16 Apr 96		16 Apr 96
Submit Final Phase II RF/RI Report	11 Sep 96		11 Sep 96

March Work Activity Status

The Phase I sampling in Pond 207C will be performed by the Phase II subcontractor to realize cost savings. The Phase II schedule will not allow the 207C Pond investigations to occur until mid-April 1995.

On March 23, 1995, the Seismic Refraction Survey was completed. The geoprobe work began on March 15, 1995, and is scheduled to be completed on May 31, 1995.

Technical Memoranda

Project

OU 4 - Solar Evaporation Ponds

TM #1

TM Title

TM Status

Vadose Zone Investigation
 Draft submitted to EPA/CDPHE: 16 Nov 92
 Comments received: 30 Nov 92
 Conditional approval: 30 Nov 92
 Projected submittal of Final TM to EPA/CDPHE: 15 Dec 92
 Actual submittal date of Final TM: 15 Dec 92
 Submittal of TM #1 Vadose Zone Schedule: 19 May 93
 EPA/CDPHE final approval of TM #1: 17 Jun 93

TM #2
TM Title
TM Status

Modification to Field Activities
Draft submitted to EPA/CDPHE: 18 Mar 93
Comments received: 07 May 93
Projected submittal of Final TM to EPA/CDPHE: 07 Jun 93
Actual submittal date of Final TM: 09 Jun 93
EPA/CDPHE final approval of TM #2: 30 Jun 93

TM #3
TM Title
TM Status

Environmental Evaluation
Draft submitted to EPA/CDPHE: 19 Mar 93
Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93
Projected submittal of Final TM to EPA/CDPHE: 30 Apr 93
Actual submittal date of Final TM: 02 Jul 93
EPA/CDPHE final approval of TM #3: 30 Jul 93

TM #4
TM Title
TM Status

Human Health Risk Assessment Exposure Scenarios
Draft submitted to EPA/CDPHE: 19 Mar 93
Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93
Projected submittal of Final TM to EPA/CDPHE: 11 Jun 93
Actual submittal date of Final TM: 11 Jun 93
EPA/CDPHE final approval of TM #4: 25 Jun 93

Planned Work for April

- The field activities for the Phase II RFI/RI Program are scheduled to continue.

Problems

None

Open Items

None

2.4.2 OU 4 REMEDIATION

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Draft Phase I Proposed IM/IRA Decision Document	27 May 94
All Solar Ponds Emptied of Water and Sludge	15 Jan 95
Final Phase I Proposed IM/IRA Decision Document	01 Feb 95

**Future IAG Milestones
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit IM/IRA Responsiveness Summary	25 Jan 95	09 Jun 95*	On schedule
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	29 Aug 95*	On schedule
Submit IM Title II Design Work Plan	24 Jun 96	18 Dec 95*	On schedule
Start of Soil Excavation Relative to IHSS 101 Closure	28 Jan 97	28 Oct 96*	On schedule

* On November 23, 1994, the regulatory agencies approved the extension.

March Work Activity Status

Waste Treatment

On March 13-14, 1995, a meeting was held among the regulatory agencies, the DOE, and the Rocky Flats Environmental Technology Site personnel. At the meeting, the Draft Treatability Study Report for sludges was presented. The process train design development was also discussed along with strategic issues surrounding repository options.

~ Efforts to transfer Pond 207C sludges from the metal storage containers into tanks continues.

All the Treatability Study mixes were completed. The mix development to optimize the pH best suited to leachate minimization continues. The proposal for additional modeling and sample leach testing was received, evaluated, and awarded to the subcontractor. The new scope addresses soil and waste composite mix designs.

The review process for the sludge and pondcrete treatment units, which is required under the National Environmental Policy Act, will be performed in parallel with the public comment period on the Solar Ponds Projects' IM/IRA Decision Document. The Decision Document incorporates an Environmental Assessment that will be the basis of the DOE's National Environmental Policy Act decision. The schedule logic was revised to reflect the connection to the public comment period. Following the review, a decision will be made on whether a commitment management summary or a mitigation action plan will be needed for future tracking purposes. The need for follow-on National Environmental Policy Act documents, such as a Finding of No Significant Impact, will be evaluated at the end of the public comment period when the public's interest in continuing the National Environmental Policy Act process can be evaluated.

Waste Storage and Disposal

As of March 24, 1995, a total of 1,398 metal containers were repacked and stacked. DOE's compliance strategy continues to be

implemented despite the CDPHE's reversal in policy and the subsequent disagreement over the use of absorbent material in the repacked crates. DOE believes the need to take action on long standing pad compliance issues balances the risk that a second repacking effort may ultimately be required. Also, recent communication with the CDPHE indicate that for the waste being stored and the way the waste is being stored, the asphalt pad provides a "sufficiently" impervious surface to meet Part B Permit requirements. This will reduce required upgrades to meet the Part B Permit requirements for which funding must be found.

Interim Remedial Action

Water Management - The modular tanks have a remaining usable volume of about 765,571 gallons. The RCRA inspections and compressor rotations in Building 910 were satisfactorily completed. The RCRA inspections of the Modular Storage Tanks were completed.

Interim Measure Remediation

IM/IRA Decision Document - In February 1995, the Final Phase I Proposed IM/IRA Environmental Assessment Decision Document was delivered to the regulatory agencies, and the 60-day public comment period began.

DOE is evaluating whether to remove the closure of Building 964, which has an approved Closure Plan, from the Decision Document. A draft schedule to accelerate the removal of this building has been completed. The schedule was accelerated by a proposal to close the RCRA Unit #24 by means of the Part B Permit Closure Plan instead of utilizing the IM/IRA Decision Document. The estimated completion date was improved by approximately six months. The schedule must be reviewed by the Rocky Flats Environmental Technology Site RCRA Permitting and Compliance personnel to ensure that required permit modifications and regulatory notifications can be accomplished as scheduled. On April 3, 1995, the National Environmental Policy Act Compliance Committee will review the project.

Preconstruction - The security plan for construction of the vehicle access gate has been completed, and all approval signatures have been obtained. Funding issues concerning this project are still unresolved.

On March 14, 1995, the Purchase Requisition, the Statement of Work, and the design documents were submitted to Procurement for the General Site Improvement activity. On March 22, 1995, the Draft Integrated Work Control Package was completed.

On March 14, 1995, the 60 percent Title II design for the Post-Closure Care and Monitoring System was completed. The Post-Closure Care and Monitoring design has been incorporated into the 60 percent Remedial Design.

On March 15, 1995, the mobilization for the site-grading activity in conjunction with the cargo container relocation activity began. On March 24, 1995, the site grading was completed. The relocation of the cargo containers will begin April 1, 1995, and will utilize two large cranes and the support of the Rocky Flats Environmental Technology site Logistics personnel. This relocation should be complete by the end of April 1995.

All electrical wiring, conduit, and piping have been removed from Cement Silo #1. The concrete pump has also been removed. Exterior paint sampling was completed, and preliminary gamma spectrometer results indicate all samples are below the allowable limits. If these results are confirmed, special containment for dismantling the silo will not be required. The interior of the silo has been determined to not be a contaminated area. An access port for emptying the cement was cut on March 17, 1995. Emptying of the silo began on March 20, 1995. Silo #1 was dropped and loaded on a flatbed truck on March 24, 1995,

Interim Measure Sludge - Activities to remove sludge from the clarifier to sludge holding tanks have been delayed pending the transfer of the 207C Pond salt that is currently being stored in metal crates. As of March 27, 1995, six metals have been emptied. Problems have been encountered in filling the tanks with the material from the metal containers because of debris (mostly tar paper) plugging inlet piping. To solve the problem, a modification to the piping is being made. Twelve additional sludge holding tanks were ordered in February 1995. The first shipment was received in March 1995. Additional tanks may be required depending on the amount of water required to slurry the salts for removal.

Planned Work for April

- The transfer of salt in metal containers to sludge holding tanks will continue.
- The site stripout activity will continue.
- The relocation of cargo containers will commence.
- The 904 repack will continue.
- The execution of the Public Outreach Program, which is designed to inform the public and other interested parties of the facts of the proposed interim action, will continue.

Problems

Inadequate Radiological Control Technician support is impacting lower priority Solar Ponds Projects (areas with float) such as site strip out. Corrective actions are being pursued, and those actions include (1) waiting for additional Radiological Control Technicians to graduate from training in June 1994 and (2) subcontracting the Radiological Control Technician services.

Open Items

The OU 4 engineered barrier issues that initiated a dispute resolution in July 1994 continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. Both the EPA and the DOE support the plan that calls for the placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of an offsite disposal, but the CDPHE has opted to reserve comment until after the public comment period on the Phase I IM/IRA Decision Document. An extension was granted in November 1994 for all related Phase I milestones, but the regulatory concurrence for a planned technical scope is still not known. The CDPHE appears supportive on the placement of the processed pond sludge under the cap but does not support pondcrete placement. At the January 25, 1995, meeting, the public response was positive.

A key OU 4 assumption is the use of the Corrective Action Management Unit/Temporary Unit for treating certain remediation wastes during Phase I Remediation. Based upon direction from CDPHE during the Joint Working Sessions, DOE plans to use the Corrective Action Management Unit/Temporary Unit regulations to promote significant cost savings and schedule acceleration while fully protecting human health and the environment. However, CDPHE is now questioning the applicability of the law on the OU 4 remediation, and the CDPHE has not communicated whether additional requirements will be imposed. Therefore, this regulatory uncertainty poses increased risk to the Phase I remediation project schedule.

Tent 12 and the pad area south on the 750 Pad (for pondcrete) and Tent 11 on the 904 Pad (pondcrete) are required to treat the sludge and pondcrete. These areas need to be made available by either moving wastes to another location or preferably by shipping all saltcrete that complies with the Landfill Disposal Restrictions to an offsite location. Neither option is currently funded, although partial funding for saltcrete disposal does exist. A substantial increase in the funding for saltcrete disposal is needed to execute this option.

2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises the assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

05 Apr 91
30 Aug 91

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93	01 Nov 95	11 May 95
Submit Final Phase I RFI/RI Report	03 May 94	02 Apr 96	14 Nov 95

March Work Activity Status

According to TM #15, *Addendum to the Field Sampling Plan*, the following activities remain: Core logging continues with input of the sample collection data into the database, and groundwater monitoring and water level measurements will continue until FY 96. On March 16, 1995, the surveying of well and boring locations was completed.

On March 27, 1995, draft responses to comments from the regulatory agencies on the Draft Final Exposure Assessment TM were received. The comment responses included the recent guidance regarding mining and open space receptors and the elimination of residential scenarios. Since residential use is the primary driver for modeling, modeling activities will probably not be included in the Final RFI/RI Report.

Groundwater modeling, surface water modeling, and air modeling activities for the Human Health Risk Assessment continue with the

incorporation of risk simulations for all three models into the Risk Assessment calculations. Preparations of the final modeling reports have been initiated.

In March 1995, the Final Chemicals of Concern TM was transmittal to the regulatory agencies. The Chemicals of Concern TM will be used for the development of the Human Health Risk Assessment and the FS.

Comments from the EPA on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model were due on March 3, 1995, and were not received. The EPA has informally communicated that an approval letter is near completion. This delay will not impact the critical path.

The Draft CMS/FS Task 6 Report was submitted on schedule for an internal review, and comments from the reviewers are due April 7, 1995. A second draft will not be prepared, but comments will be incorporated in the Draft CMS/FS TM, *Development and Screening of Alternatives*.

On March 24, 1995, the request for Modification No. 2 for the OU 5 CMS/FS subcontract was sent to the subcontractor. The proposal is due back by April 1, 1995. The modification covers additional scope of work conducted under the CMS/FS project (i.e., the field support personnel utilized during the geotechnical boring program).

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation was concluded: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation was concluded: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation was concluded: 07 Jun 93

Actual date of submittal: 12 Apr 93

TM #5	Soil Gas Sampling at IHSS 115
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 25 Mar 93
TM #6	Cone Penetrometer at IHSS 115
TM Title	When preparation was concluded: 14 Apr 93
TM Status	Actual date of submittal: 25 Mar 93
TM #7	Soil Borings at IHSS 133
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 19 Feb 93
TM #8	Monitoring Wells at IHSS 115
TM Title	TM #8 has been canceled and has been replaced by a letter outlining
TM Status	the justification for the location of the wells in IHSS 115.
TM #9	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete
TM Title	Wash Pad
TM Status	Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93
	Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93
TM #10	Soil Borings at IHSS 209
TM Title	When preparation was concluded: 06 Mar 93
TM Status	Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
TM #11	Contaminants of Concern
TM Title	Actual date of the Draft Final TM submitted to EPA/CDPHE:
TM Status	08 Nov 94
	Received comments from CDPHE: 13 Dec 94
	Received comments from EPA: 15 Dec 94
TM #12	Exposure Scenarios
TM Title	Actual date of the submittal of the Final TM to EPA/CDPHE:
TM Status	10 Jan 95
	Received comments from CDPHE: 13 Feb 95
TM #13	Modeling
TM Title	Actual date of submittal of the Draft Final TM to EPA/CDPHE: Dec 93
TM Status	Actual date of submittal of the Final to EPA/CDPHE: 29 Nov 94
TM #14	Toxicity Assessment
TM Title	Actual date of submittal of the Final to EPA/CDPHE: 14 Nov 94
TM Status	

TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94

Planned Work for April

- Monthly water level measurements and quarterly groundwater sampling will continue.
- The Human Health Risk Assessment work that includes risk calculations and surface water and groundwater modeling activities will continue.
- The CMS/FS with an emphasis on the TM #1 will continue.
- The Environmental Evaluation of the Woman Creek Priority Drainage will continue.
- Responses to comments from the regulatory agencies on the Draft Final Environmental Assessment TM will be dispositioned for review by the regulatory agencies.
- The Final Chemicals of Concern TM will be delivered to the regulatory agencies.
- The Ecological Risk Assessment for the Environmental Evaluation of the RFI/RI Report will continue.

Problems

None

Open Items

Approval of TM #14, *Toxicity Assessment*, is pending.

Approval of TM #11, *Chemicals of Concern*, is pending.

2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B, and C (IHSSs 166.1, 166.2, and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	02 Oct 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Feb 96	20 Nov 95

March Work Activity Status

The scope of work was revised for the FS by making changes to TM #1 and TM #2 (i.e., substituting the recreational scenario for the residential scenario, estimating life cycle analysis costs, and evaluating preble's mouse habitat).

DOE and the Rocky Flats Environmental Technology Site personnel completed their review of FS TM #1. Comments were compiled and submitted to the Rocky Flats Environmental Technology Site personnel for response and incorporation.

In February 1995, DOE submitted the Ecological Risk Assessment Methodology Sitewide Conceptual Model and the Final TM #2, *Exposure Scenarios*, to the regulatory agencies. To date, no response has been received.

On March 21, 1995, Section 5, Contaminant Fate and Transport, of the RFI/RI Report from the subcontractor was received.

Calculations for the Human Health Risk Assessment were completed in draft form. The corresponding text continues to be written.

Comments from the EPA on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model were due on March 3, 1995, and were not received. The EPA has informally communicated that an approval letter is near completion. This delay will not impact the start of problem formulation.

Efforts on the following projects continue:

- The professional judgement portion of the tier 2 screening of Ecological Chemicals of Concern for the Ecological Risk Assessment.
- The transferral of IHSS 143, The Old Outfall, to the Industrial Area (IA) OUs. The regulatory agencies have informally agreed to this action.

Sprinkler Pipe Cleanup and B-3 Pond Cleanup

Three trailer loads of sprinkler piping and one truckload of sprinkler wheels have been removed to the Property Utilization and Disposal Yard. Off loading has been slow, but progress continues to be made.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1
TM Title
TM Status

Work Plan Modifications
Approved by EPA: 08 Jan 93

TM #2
TM Title
TM Status

Exposure Assessment
When preparation of the Draft TM was concluded: 07 July 93
Date the Draft TM was submitted to EPA/CDPHE: 07 Jul 93
Actual date of submittal of the Final TM to EPA/CDPHE: 14 Feb 95

TM #3
TM Title
TM Status

Modeling Description
When preparation of Draft was concluded: 10 Nov 93
Date the Draft TM was submitted to EPA/CDPHE: 10 Nov 93
Date EPA/CDPHE comments were received: 23 Dec 93
Date the Final TM was submitted to EPA/CDPHE: 14 Jan 94
Actual date of submittal of the Second Final TM to EPA/CDPHE: 30 Jan 95

TM #4
TM Title
TM Status

Contaminants of Concern
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94
Date EPA/CDPHE comments were received: 03 Oct 94
Approved on 28 Dec 94

TM #5
TM Title
TM Status

Toxicity Factors
Date the Draft Final TM was submitted to EPA/CDPHE: 23 Aug 94
Approved on 28 Dec 94

Planned Work for April

- The preparation of the Assessment Endpoint TM, *Conceptual Model TM*, and the Chemicals of Concern Screen Methodology TM for the Ecological Risk Assessment continues.
- Work on the RFI/RI Report will continue. The Human Health Risk Assessment will be approximately 85 percent complete by April 30, 1995.
- Work on the Ecological Chemical of Concern Screening and the Problem Formulation Sections of the Ecological Risk Assessment continues.
- The Draft Final FS TM #1 will be delivered to the regulatory agencies.
- The transferral of the IHSS 143 to the IA OUs continues.

Problems

None

Open Items

- Approvals of TM #3, *Modeling Description*, and TM #2, *Exposure Assessment*, are pending from the regulatory agencies.

Comments from the regulatory agencies on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model are pending.

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area, which is a section of the Present Landfill located in the southwest corner, used between 1986 and 1987 as a temporary storage area for hazardous waste. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work

Changes This Period None

Technical Approach

Changes This Period None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	Deleted *
Submit Draft Phase II RFI/RI Work Plan	Deleted *
Submit Final Phase I RFI/RI Report	Deleted *
Submit Final Phase II RFI/RI Work Plan	Deleted *
Submit Preliminary Draft Proposed Action Memorandum (leachate) to CDPHE/EPA ¹	13 Oct 94
Submit Draft Revised Phase I Work Plan Technical Memorandum ²	23 May 94
Submit Final Phase I Work Plan Technical Memorandum ²	08 Sep 94
Submit Final Draft Proposed Action Memorandum (leachate) for Public Comment ³	13 Oct 94
Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA ⁴	30 Nov 94

* CDPHE deleted per Oct 21, 1994, letter.

¹ CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Preliminary Draft IM/IRA to CDPHE/EPA"

² New milestones per CDPHE October 21, 1994, letter.

³ CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Draft IM/IRA for Public Comment"

⁴ CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Responsiveness Summary IM/IRA to CDPHE/EPA"

**Future IAG Milestones
Through FY 96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	31 Aug 95	03 May 95
Submit Final Phase I Proposed IM/IRA Decision Document		05 Jan 96	03 Jul 95
Submit IM/IRA Responsiveness Summary	14 Aug 96	01 Apr 96	01 Apr 96

Landfill Leachate Collection Proposed
Action Memorandum

Release Final Responsiveness Summary and Proposed Action Memorandum	22 Mar 95	22 Mar 95
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March Work Activity Status

The final round of groundwater sampling was completed. The analytical data will be used to determine the nature and extent of contamination in No Name Gulch, which is downgradient of OU 7.

-The procurement process for the OU 7 Seep Collection and Treatment System was postponed pending further discussions with the regulatory agencies.

The methodology to perform a focused Risk Assessment under EPA's presumptive remedy for municipal landfill closure was defined. Focused Risk Assessments were performed on all affected media at OU 7.

Technical Memoranda

Project

OU 7 - Present Landfill

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review: 23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE: 09 Sep 94

Approved by the regulatory agencies: 30 Sep 94

Planned Work for April

- The value engineering process for the OU 7 closure to reduce nonessential costs and improve productivity will begin.
- Closure strategies for all contaminated media in OU 7 will be developed.

Problems

None

Open Items

The concurrence from the regulatory agencies on issues concerning the Proposed Action Memorandum for leachate seep collection and treatment. The postponement of the Proposed Action Memorandum activities will affect the associated milestones.

2.IA INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of a close proximity to each other and similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work

Changes This Period

None

Technical Approach

Changes This Period

None

IAG Milestone

Accomplishments

Submitted Proposed Plan for Reconfiguration
of the IA OUs

04 Nov 94

Future IAG Milestones

Through FY 95

This information is listed in the IA OUs.

March Work Activity Status

DOE issued a formal Stop Work Order in March 1995. The Stop Work Order does not apply to current field work activities. Surface Water and Sediment Sampling was exempt from the Stop Work Order issued in March 1995.

On March 5, 1995, formal approval of the IA Surface Water and Sediment Field Sampling Plans was received from CDPHE. The first set of samples was obtained during the week of March 20, 1995. The ongoing sampling program will continue into April 1995.

The Proposed Plan for Reconfiguration of the IA OUs was submitted to the regulatory agencies in November 1994. To date, the proposal remains in review by the regulatory agencies. The plan proposes that the IA OUs be integrated and consolidated into three OUs.

The development of the Activity Data Sheets for the Five-Year Plan for FY 97 through 2001 continued. The six individual OU Activity Data Sheets are being combined as one consolidated Activity Data Sheet for the IAs beginning in FY 96.

The in-depth formal review of all the information for the IA received from the Environmental Evaluation subcontractor was submitted for peer review and is planned to be completed in April 1995.

The Statement of Work for the intrusive portion of the IA OUs RFI/RI was submitted to the Rocky Flats Environmental Technology Site Procurement personnel in January 1995. On March 9, 1995, the proposal was received from the subcontractor. The Stop Work Order for the IA will preclude further action on the Statement of Work.

IA OUs Quality Assurance

The following Quality Assurance activities were performed: Line Safety Training requirements were completed, and issues regarding tank sampling were resolved.

Technical Memoranda

Project

Integrated Industrial Area Operable Units

TM #1

TM Title

TM Status

IA Surface Water and Sediment Sampling Plan

Projected date of submittal to EPA/CDPHE: 12 Jan 95

Actual date of submittal: 05 Jan 95

Date CDPHE comments were received: 15 Jan 95

Date CDPHE approval was received: 5 Mar 95

Planned Work for April

- The IA Environmental Evaluation peer review and the second stage Surface Water and Sediment Sampling field activities will be completed.

Problems

None

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

Scope of Work

Changes This Period None

Technical Approach

Changes This Period None

IAG Milestone

Accomplishments Submit Draft Phase I RFI/RI Work Plan 01 May 92

Submit Final Phase I RFI/RI Work Plan 01 Dec 92

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Stop Work Order	04 Nov 97
Submit Final Phase I RFI/RI Report	12 Jul 94	Stop Work Order	10 Feb 98

March Work Activity Status

Changes that were agreed to by the regulatory agencies and incorporated into the Final TM #1 were sent to CDPHE for approval prior to the production and formal transmittal of the TM.

Field work for the OU 8 RFI/RI Stage 2 investigation is essentially complete. As laboratory results from the soil gas samples are obtained, some sites are being identified that require resampling because of dilution requirements in the analysis. However, this will not impact the critical path as the remaining soil gas work involves onsite measurement.

Data analysis and preparation of the Stage 2 Nonintrusive Field Investigation Summary Report are ongoing. This effort is focusing on documenting the field activities and the results of the onsite generated data (e. g., NaI radiation surveys, High Purity Germanium radiation surveys, and soil gas analyses). About half of the results

from the laboratory analyses have been received. However, minimal data have been validated to date. Receipt of all of the validated data is not expected for several months. Additional sections of the Stage 2 Nonintrusive Field Investigation Summary Report will be compiled as the data becomes available.

Because of delays in approval of the IA Reconfiguration Plan presented as part of the Rocky Flats Cleanup Agreement negotiation, a Stop Work Order was issued that affects the preparation of TMs for the IA. Under the terms of the Stop Work Order, work will continue on sampling and analysis activities, but data evaluation and development of recommendations are not being performed.

IA IM/IRA Interim Remedial Action Plan

The IM/IRA work package was rebaselined.

Procurement of equipment is proceeding for the accomplishment of the IM/IRA proposed actions. Partial installation of equipment was accomplished.

Work on the Implementation Plan continues and is anticipated to be completed by the end of May 1995.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

Investigation of Foundation Drains and Other Data Compilation
Addendum to the OU 8 Work Plan, Draft Final

TM Status

Projected date of submittal to EPA/CDPHE: 01 Dec 94

Actual date of submittal: 23 Nov 94

Date when EPA/CDPHE comments received: To be determined

TM #2

TM Title

Results of Nonintrusive Field Investigations and Intrusive Work Plans
(Actual Title has not been finalized)

TM Status

Projected date of submittal to EPA/CDPHE: To be determined

Actual date of submittal: To be determined

Date when EPA/CDPHE comments received: To be determined

Planned Work for April

- Work on TM #1 and TM #2 will continue after the Stop Work Order is lifted.
- Field work and the Data Summary Report will continue.

Problems

None

Open Items

None

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of the work has resulted in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

Based on the EPA and the CDPHE review of the Field Sampling Plan for Pipelines, the technical approach for pipeline investigation will be modified to reduce scope and schedule. This will include scaling back the investigation on certain lines and replacing test pits with less intrusive sampling methods.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

08 Jun 90
26 Nov 91

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	06 Sep 94	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95		To be determined*

* To be determined pending IA reconfiguration.

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		To be determined*
Submit Final Phase II RFI/RI Work Plan	07 Aug 95		To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		To be determined*
Submit IM/IRA Responsiveness Summary	08 Feb 96	08 Feb 96	To be determined*
Submit Final Phase I IM/IRA Decision Document and Responsiveness Summary	07 May 96	07 May 96	To be determined*
Submit Corrective Design/Remedial Design Work Plan	07 Jun 96	07 Jun 96	To be determined*

* To be determined pending IA reconfiguration.

March Work Activity Status

Because of delays in approval of the IA Reconfiguration Plan presented as part of the Rocky Flats Cleanup Agreement negotiation, a Stop Work Order was issued that affects the preparation of the TMs for the IA. Under the terms of the Stop Work Order, work continues on sampling and analysis, but data evaluation and development of recommendations are not being performed.

- The Draft Final TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, has been under review by the regulatory agencies since November 1995. DOE received a plan for rescoping the OU 9 TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, in February 1995. Further work on rescoping the pipeline investigation has been suspended because of the Stop Work Order.

The modification to the IA Health and Safety Plan that addresses Tanks T-8 T-9, and T-24/32 was completed and issued.

Additional safety requirements to address Tanks T-8, T-9, and T-24 are being investigated. The additional requirements could be necessary since the tanks will probably be active during the field sampling activities. Precautions such as lockout/tagout will have to be taken to ensure that plenum deluge or other hazardous fluids cannot enter the tank during sampling. This could disrupt operations or the safety system unless preparations are made in advance. In addition, high levels of contaminants are being detected in and around the tanks and additional safety precautions are being required. To deal with these precautions, a slower paced sampling schedule as well as additional resources will probably be required.

Intrusive and nonintrusive sampling activities on OU 9 outside original process waste tanks continued. The sampling activities included sodium iodide surveys, tank inspection and sampling, borehole and surficial soil sampling, and ground water sampling.

On March 10, 1995, during the drilling of an OU 9 borehole south of Building 122, a piece of polyvinyl chloride plastic was recovered. No pipe lines were shown on plant utility drawings, and prior to the start of drilling activities, a metal detector did not indicate the presence of piping. A subsequent check of the building map also did not indicate the presence of a pipeline. Finally, a map prepared by a subcontractor revealed the presence of a process waste line. The area was excavated, and the secondary containment had been breached. The interior waste line was intact, and no material had leaked from the line. The line did not have locator tape, which is now a plant requirement. All drilling and utility locations were in accordance to plant rules and policies including utility location, soil disturbance permitting, land use permit, and the survey using the metal detector. A critique was conducted on March 16, 1995. A repair clamp has been purchased, and the line is currently in the process of being repaired.

On March 17, 1995, sampling and inspection activities were being conducted on Tanks T-14 and T-16 southeast of Building 774. A smear on the grating of one of the T-16 tanks that measured 11,800 disintegrations per minute removable alpha was taken. These levels exceed the limits in the As Low As Reasonably Achievable Job Review by 2,000 disintegrations per minute (at this level, plastic containment is to be utilized). Additional smears were taken for health and safety purposes. Based on the finding of a March 20, 1995, critique, additional smears, even for health and safety, should not have been taken. As part of the findings of the critique, it was determined that health and safety had not been compromised. A step-by-step review of the As Low As Reasonably Achievable Job Review was conducted to ensure that each portion was fully understood by all parties.

The addendum to OU 9 TM #1, *Volume I, Part A, Field Sampling Plan-Outside Tanks*, to address Tanks T-8, T-9, T-11, T-24, T-30, and T-32 was finalized and is in the document control process. No comments were received from the regulatory agencies.

Technical Memoranda

Project

OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94
Projected date of submittal to EPA/CDPHE: Mar 94
Actual date of submittal: 15 Mar 94
Date EPA/CDPHE comments received: 11 Apr 94

TM #1

TM Title

TM Status

Field Sampling Plan - Volume II, Part A, Outside Pipelines
When preparation was concluded: Aug 94
Projected date of submittal to EPA/CDPHE: Nov 94

Actual date of submittal: Nov 94

Date EPA/CDPHE comments received: To be determined

Planned Work for April

- Work on the OU 9 outside tank investigation field activities including the High Purity Germanium Survey, the sodium iodide survey, the soil boreholes, the groundwater sampling, and the tank inspection/sampling will continue.

Problems

The March 10, 1995, occurrence in which the drilling of an OU 9 borehole south of Building 122 breached the secondary containment of a process waste line highlighted the need for Site utility and building drawings to be updated to include all lines at the Site. This will require a review of past drawings so that utility lines not shown on utility maps can be added. Future intrusive efforts in the IA are going to increase the risk of hitting utilities, security systems, and other subsurface features.

Open Items

Comments from the regulatory agencies have not been received on the addendum to the OU 9 Field Sampling Plan for Outside Tanks for Tanks T-11 and T-30. Comments are also due from the regulatory agencies on the Draft TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

Scope of Work

Changes This Period None

Technical Approach

Changes This Period None

IAG Milestone Accomplishments

Submit Draft Phase I RF/RI Work Plan
Submit Final Phase I RF/RI Work Plan

27 Nov 91
01 May 92

Future IAG Milestones Through FY 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RF/RI Report	25 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RF/RI Report	30 Jan 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95		To be determined*
Submit Draft Phase II RF/RI Work Plan	27 Jun 95		To be determined*
Submit Final Phase II RF/RI Work Plan	21 Nov 95		To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	24 Oct 95	To be determined*
Submit IM/IRA Responsiveness Summary	06 Mar 96	06 Mar 96	To be determined*
Submit Final Phase I IM/IRA Decision Document	04 Jun 96	04 Jun 96	To be determined*
Corrective Design/Remedial Design Work Plan	05 Jul 96	05 Jul 96	To be determined*

* To be determined pending IA reconfiguration.

March Work Activity Status

On March 7, 1995, DOE issued a Stop Work Order on the IA OUs. The Stop Work Order covers all work associated with TMs and all associated intrusive work as part of the TMs. The Stop Work Order will be in effect until DOE can negotiate the Rocky Flats Cleanup Agreement that will contain new milestones for the IA OUs. Integral to the Rocky Flats

Cleanup Agreement will be the approval of the IA OU Reconfiguration Plan that was submitted to the regulatory agencies in November 1994.

The Draft TM #1 comments were scheduled to be received from the regulatory agencies on February 6, 1995, but have not been received to date. The schedule for the delivery of the OU 10 Final Phase I Nonintrusive TM #1 is in jeopardy of being significantly delayed from the preliminary schedule developed in June 1994. Further delays in receipt of comments will result in a day-for-day slippage of the Final document delivery schedule. An attempt to recover the schedule slippage is being made. The current Stop Work Order for the IA OUs could adversely affect the delivery of the Final document.

Technical Memoranda

Project

OU 10 - Other Outside Closures

TM #1
TM Title
TM Status

Draft Final Phase I Nonintrusive TM #1
When preparation was concluded: 17 Jan 95
Projected date of submittal to EPA/CDPHE: 17 Jan 95
Actual date of submittal: 17 Jan 95
Date comments were received from the EPA/CDPHE: To be determined

TM #1
TM Title
TM Status

Final Phase I Nonintrusive TM #1
When preparation was concluded: To be determined
Projected date of submittal to EPA/CDPHE: 06 Apr 95
Actual date of submittal: To be determined
Date comments were received from the EPA/CDPHE: To be determined

Planned Work for April

- If the Stop Work Order is lifted, the TM #1 comments will be received from the regulatory agencies and incorporated into the Final TM.
- The validation of the remainder of the sample analytical data will be completed.

Problems

If the IA Stop Work Order is not resolved, it has the potential to significantly disrupt the flow of work and the progress of the project. If field crews are reassigned, much greater than day-for-day schedule and cost impacts are possible.

Comments from the regulatory agencies for Draft TM #1 have not been received.

Open Items

None

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

Scope of Work
Changes This Period

None

Technical Approach
Changes this Period

None

IAG Milestone
Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

08 Jun 90
02 Jan 92

Future IAG Milestones
Through FY 95

<u>Milestone Name</u>	<u>Planned</u> <u>Date</u>	<u>Approved</u> <u>Extension</u> <u>Status</u>	<u>Forecast</u> <u>Date</u>
Submit Draft Phases (combined) RFI/RI Report	20 Sep 94	20 Jul 95*	19 May 95
Submit Final Phases (combined) RFI/RI Report	22 Feb 95	19 Sep 95*	21 Jul 95
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted
Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95		Proposed elimination
Submit Final Phase II RFI/RI Work Plan	24 Jan 96	24 Jan 96	Proposed elimination
Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	14 Mar 96	13 Apr 98
Submit Phase I IM/IRA Responsiveness Summary	22 Jul 96	22 Jul 96	30 Oct 98

* Revised according to the Process Improvement Proposal.

March Work Activity Status

The Draft CDPHE Conservative Screen Report was completed and was presented to the regulatory agencies on March 24, 1995. The screen supports a No Action Closure for OU 11.

Technical Memoranda

Project

OU 11 - West Spray Field

TM

TM Title

Revised Field Sampling Plan and Data Quality Objectives

TM Status

Submitted to EPA/CDPHE: 31 Mar 94

TM approved

TM #1

TM Title

Exposure Scenarios

TM Status

When preparation was concluded: Mar 94 (late)

Projected date of submittal to EPA/CDPHE: 14 Dec 94

Actual date of submittal: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

TM #2

TM Title

Modeling

TM Status

When preparation was concluded: 22 Mar 94 (late)

Projected date of submittal to EPA/CDPHE: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

TM #3

TM Title

Contaminants of Concern

TM Status

When preparation is concluded or estimated to be concluded:

20 Sep 94

Projected date of submittal to EPA/CDPHE: 09 Nov 94

Actual date of submittal: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

TM #4

TM Title

Toxicity

TM Status

When preparation is concluded or estimated to be concluded:

10 Oct 94

Projected date of submittal to EPA/CDPHE: 12 Dec 94

Actual date of submittal: Proposed for elimination

Date EPA/CDPHE comments received: To be determined

Planned Work for April

- The Environmental Evaluation Problem Formulation TM will be completed.
- Preparation of the Draft RFI/RI Report will continue.

Problems

None

Open Items

The Draft CDPHE Conservation Screen Report was delivered to the regulatory agencies on March 24, 1995, and comments are pending.

2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of the development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

08 May 92
05 Oct 92

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	15 Sep 94	Stop Work Order	To be determined*

* To be determined pending IA reconfiguration.

March Work Activity Status

The Stop Work Order that was issued in March 1995 includes work to develop the TM #2, *Nonintrusive Field Activities Summary and Intrusive Field Sampling Plan*. Currently OU 12 has finished the Preliminary Draft TM that summarizes the results of the nonintrusive activities and sets forth the intrusive recommendations. DOE will not comment on this TM because of the Stop Work Order. The Stop Work Order will delay the completion and approval of this TM and in turn will delay the intrusive

activities planned for late summer 1995. The delay in field activities will in turn delay subsequent activities including submittal of the RFI/RI Report or decisions regarding a no further action and potential early actions. The Stop Work Order includes the stoppage of subcontracted activities and further hampers the start of intrusive activities. The team assembled to perform these activities took approximately nine months to train, and if work is stopped, there is no guarantee that these workers will not be reassigned to other projects and may become unavailable to work on OU 12 activities.

Using the Global Positioning System, the surveying of points where sampling occurred for OU 12 was completed in March 1995.

Technical Memoranda

Project

OU 12 - 400/800 Area

TM #2

TM Title

Summary of Nonintrusive Field Investigations

TM Status

Projected date of submittal to EPA/CDPHE: 03 Oct 95

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

Planned Work for April

- If the Stop Work Order is lifted, DOE and the Rocky Flats Environmental Technology Site Personnel will review the Preliminary Draft Nonintrusive Summary TM.

Problems

The Stop Work Order will delay characterization activities.

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

15 May 92
12 Oct 92

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	11 Jan 95	Stop Work Order	To be determined*

* To be determined pending IA reconfiguration.

March Work Activity Status

Surficial soils data validation is 99 percent complete.

Work on TM #2, *Results of Nonintrusive Field Investigations*, continues.

Soil gas investigations are complete.

The Stop Work Order that was put in place in March 1995 could

significantly impact schedules including the development of the RFI/RI Report.

A thick sludge-like area of contamination was identified in IHSS 128. Analysis of a grab soil sample indicates that the contamination is likely a waste oil contaminated with significant levels of tetrachloroethane (100,000 ug/kg). Although the data are only level II, (screening level) this finding must be confirmed and the nature and extent of the contamination be determined. This thick sludge-like area may prove to be a significant source of contamination not only for the vadose zone but for groundwater in the area. DOE received a letter from the Rocky Flats Environmental Technology Site personnel that outlines concerns and requests permission (in light of the Stop Work Order) to accelerate investigations at this IHSS.

Technical Memoranda

Project

OU 13 - 100 Area

TM #1

TM Title

TM Status

Addendum to Field Sampling Plan

When preparation was concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

- Date EPA/CDPHE comments were received: 16 May 94

TM #2

TM Title

TM Status

Results of the Nonintrusive Field Investigations

Projected date of submittal to EPA/CDPHE: 07 Feb 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

Planned Work for April

- If the Stop Work Order is lifted, the TM #2 preparation will continue.
- If the Stop Work Order is lifted, the investigation of IHSS 128 will be accelerated.

Problems

None

Open Items

None

2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area, loading dock north of Building 776 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSS 156.1); Building 444 Parking Lot (IHSS 160); southwest of Building 664 (IHSS 161); Radioactive Site along 8th Avenue (IHSS 162); Radioactive Sites - 800 Area that includes the concrete slab north of Building 850, and Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed is preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by the EPA and the CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

26 Jun 92
19 Oct 92

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	23 May 95		To be determined*

* To be determined pending IA reconfiguration.

March Work Activity Status

Review comments on the controlled procedure for the use of a pushed type soil sampler were received. Comments are being incorporated into the procedure.

The sampling grid in the vicinity of the hotspot in IHSS 160 has been tightened to better define the area. Eight extra soil gas samples were collected and are being analyzed.

Over 20 percent of the surficial soil sample analyses have been validated. The analytical data are being evaluated and compiled into data summaries.

On March 27, 1995, DOE received a letter from the Rocky Flats Environmental Technology Site personnel that contains a Stop Work Order impacts analysis.

Technical Memoranda

Project

OU 14 - Radioactive Sites

TM #1

TM Title

TM Status

Results of Nonintrusive Field Investigations

Projected date of submittal to EPA/CDPHE: 29 Jan 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

Planned Work for April

- The controlled procedure for the pushed type soil sampler will be finalized.
- If the Stop Work Order is lifted, the preparation of the OU 14 TM #1 will be continued.
- A database format to assist in the evaluation of the analytical data that is being entered into the Rocky Flats Environmental Database System will be developed.
- The compilation of the analytical data summaries will continue.

Problems

None

Open Items

None

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. The current focus is characterization of contamination associated with the OU 15 IHSSs inside buildings, and, if applicable, decontamination of the concrete floors and other facilities at the indoor RCRA units.

Scope of Work Changes This Period

CDPHE's requirement for an independent engineer's RCRA Certification for clean closure of the OU 15 IHSSs.

Technical Approach Changes This Period

The "No Action" approach will remain, but the remedy will not be titled in the Proposed Plan.

The baseline schedule has been adjusted for the scope change and for the requirements that were placed from the Final OU 15 Phase I RFI/RI Report approval letter that was received from the regulatory agencies.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92
Submit Draft Phase I RFI/RI Report	25 Jul 94
Submit Final Phase I RFI/RI Report	19 Dec 94

Future IAG Milestones Through FY 95

None

March Work Activity Status

On March 22, 1995, the revision of the Draft Proposed Plan was completed according to the DOE's revision comments. On March 24, 1995, the revised OU 15 Draft Proposed Plan was delivered to the regulatory agencies.

RCRA Certification for Clean Closure of OU 15 IHSSs has begun.

Technical Memoranda

Project

OU 15 - Inside Building Closures

TM #1

TM Title

TM Status

Field Sampling Plan

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

TM #2

TM Title

TM Status

Human Health and Risk Assessment

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

Planned Work for April

- The RCRA Certification for Clean Closure of OU 15 IHSSs will be completed.
- The Draft Proposed Plan will be delivered to the regulatory agencies for review and comments.
- The Draft Proposed Plan will be revised into the Final document.

Problems

The regulatory agencies use of the term "institutionalize" with regards to the existing Radiological Control Program within the OU 15 IHSS buildings has not been specifically defined. Currently, the EPA considers the use of this term to mean "institutional controls."

The schedule for the OU 15 closure is still pending.

The schedule for the OU 15 closure has still not been approved.

Open Items

None

2.16 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the general Rocky Flats Environmental Technology Site ER activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Annual Treatability Study Report	04 Mar 94
Submit Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	28 Oct 94
Submit Final IA IM/IRA Decision Document	21 Nov 94
Submit Final Annual Treatability Study Report	10 Mar 95

**Future Milestones
Through FY 96**

None

March Work Activity Status

Sitewide Activities

Sitewide Treatability Studies

Removal of Actinides from Soil - Preparation of the Draft Final Removal of Actinides from the Soil Treatability Study Report continued.

Bench-Scale Agitated Leaching Studies - Two Bench-Scale Agitated Leaching programs have been completed. The resultant 104 analytical samples were forwarded to the subcontracted analytical laboratory on March 24, 1995. Additionally, based upon alpha analyses, a preliminary trend analysis has been completed. This analysis indicates increased dissolution of plutonium with increased time, increased lixiviant concentrations, and decreased slurry solids. Preparation of the Final Report has commenced.

Annual Treatability Study Report - The Final Annual Treatability Study Report has been completed and delivered ahead of schedule to the regulatory agencies on March 10, 1995.

Other Sitewide Operations

Community Relations

The OU 4 IM/IRA Environmental Assessment Decision Document is available for public review until April 11, 1995. Four public tours of the Solar Evaporation Ponds were held during March 1995. Each tour began with a video tape explaining DOE's proposed Interim Remedial Action followed by an excursion to the ponds and surrounding area. Participants became familiar with the size of the proposed cap, the surrounding terrain, and asked many questions that were answered by OU 4 technical staff.

During March 1995, technical representatives from the regulatory agencies, DOE and the Rocky Flats Environmental Technology Site met with the Jefferson County Health Department and technical representatives from the cities of Westminster and Broomfield to give an overview of the proposed Closure Plan and to answer any questions.

On March 16, 1995, the Rocky Flats Citizens Advisory Board Environmental & Waste Management committee met to draft a recommendation regarding the proposed closure of the Solar Ponds. DOE technical staff attended the committee meeting to answer questions that arose as the committee discussed the proposed closure. The committee determined that the proposed closure is acceptable and requested that a longer post closure monitoring time be instituted. The recommendation will then be forwarded to the full board for ratification and then submitted to the CDPHE.

During the Environmental Restoration Quarterly Environmental Restoration Public Information meeting held March 22, 1995 a formal

comment period was held for the public to make written and oral comments regarding the Decision Document.

Public information and involvement activities regarding the Solar Ponds will continue with technical staff meeting with interested stakeholders, information availability, and answers to all queries.

**Surface Water Management - Onsite Water Control
Drainage Repair and Improvement Projects**

DOE receive the National Environmental Policy Act documentation (Environmental Checklist and Draft Categorical Exclusion) for the Building 991 Flood Proofing project. Upon DOE approval, the Title II Design for the project will be initiated.

Surface Water Drainage Systems Environmental Assessment - On March 15, 1995, the ancillary studies supporting the Environmental Assessment (Options Analysis and Programmatic Support Study) were completed and forwarded to the National Environmental Policy Act Compliance Division.

Pond Water Management IM/IRA

A new Scope of Work was prepared and submitted to acquire expert assistance for preparation of a Biological Assessment. The purpose of the Biological Assessment is to conduct a thorough evaluation of the physical and administrative components of the IM/IRA alternatives in order to evaluate the potential jeopardy to species of concern or their critical habitats during implementation of the IM/IRA alternatives. The results of the Biological Assessment will be used by the U. S. Fish and Wildlife Service to prepare a Biological Opinion, if required.

A Baseline Change Proposal was initiated to place two upcoming IM/IRA milestone deliver dates "in suspension." It will not be possible to complete the tasks required to meet the milestones until the regulatory agencies provide comments on the IM/IRA and release the document for public review and comment.

Planned Work for April

Sitewide Activities

- Normal Community Relations activities will continue.
- The preparation of the Draft Final Removal of Actinides from the Soil Treatability Study Report will continue.

Other Sitewide Operations

Surface Water Management - Onsite Water Control

- Evaluate proposals for the Biological Assessment subcontract.

Problems

None

Open Items

None

SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy, and, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

Contract Laboratory Program Target Compound List Volatile Organic Analysis
Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List
Field Parameters
Specific Conductivity
Dissolved Oxygen
Major Anions
Radionuclides
Temperature
Total Dissolved Solids/Total Suspended Solids
pH
Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

3.2 SOILS

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

3.3 GROUNDWATER

In March 1995, 56 semi-annual wells were added to the first quarter sampling schedule increasing the total wells to be sampled for the quarter to 300. During March 1995, 101 wells were sampled, 217 monthly water measurements were completed, and 12 weekly water level measurements were ongoing. Of the 101 wells sampled, 56 were semi-annual wells and 45 were quarterly wells.

Quarterly sampling was on schedule for the first quarter with a total of 300 wells sampled: 56 semi-annual wells and 244 quarterly wells. Eighty-six of the wells were identified as RCRA compliance wells and 44 were identified as Protection Area wells.

Groundwater samples are routinely sampled for the following:

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium
Strontium
Tritium
Uranium
Cesium

Inorganic Parameters

Nitrate/Nitrite
Phosphorous
Ammonia
Total Dissolved Solids
Chlorine
Fluorine
Sulfate
Carbonate
Bicarbonate
Total Suspended Solids
Dissolved CLP¹ and additional metals
Cyanide
CLP¹ Volatile Organic Constituents

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

CLP = Contract Laboratory Program

SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats Environmental Technology Site ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc., (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RF/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Feb 92
2	Assessment	Woodward-Clyde	Layne	OU 2 RF/RI Work Plan (bedrock) surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor 1993	
3	Assessment	CH2M Hill		RI Report	Apr 92
4	Remediation	Halliburton	Halliburton	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RF/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-Closure Monitoring Plan	Nov 93
4	Remediation	Halliburton		Develop Treatability Study for Pondcrete	Aug 94

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Remediation	Halliburton		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI	Dames & Moore Blackhawk Geo Walsh & Assoc. Layne Envir. Serv. S. M. Stoller Adv. Terra Testing	Implementation of OU 5 Work Plan (excluding Environmental Evaluation) Utility Mgmt. Service	Jun 92
5	Assessment	S. M. Stoller		Implementation of Environmental Evaluation section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of EE Section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub</u> <u>Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Admin. Record	Oct 90
SW	Geo. Char.	Jacobs Eng		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State	University	Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado	School of Mines	Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr 92
SW	Geo. Char.	University of Soil Colorado		Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde Water	SAIC/Wright		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SWQA		Support	SAIC	Develop and implement QA program and field operations oversight	Dec 90
PM Support		S. M. Stoller		Program Management Support	Oct 92
PMQA Support		SAIC		Provide Quality Assurance /Quality Control support to ER Program	Nov 92

ACRONYMS

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
M	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum